

PATENT CLAIMS

1. Safety system for a locking device of a motor vehicle with

- a control device which has at least one power switch for controlling an electromechanical unit in the "blocking" (safe) state, and
- a central control device which has signal links to this control device and further control devices of the motor vehicle, wherein at least the electromechanical unit can be controlled through the central control device via the signal links,

characterised in that

the control device is connected to the central control device through an electrical lead connection which is independent of the signal links, and a potential of a control connection of this power switch or a power connection of the control device can be controlled by the central control device via this independent electrical lead connection.

2. Safety system according to claim 1, **characterised in that** the central control device has an evaluator device which is designed to control the power connection in dependence on a state or an emergency operation of the signal links, more particularly of a bus system.

3. Safety system according to one of the preceding claims, **characterised in that** for control the potential can be switched to this independent electrical lead connection.

4. Safety system according to one of the preceding claims, **characterised in that** the central control device has at least one switch for switching or separating at least two different potentials.

5. Safety system according to one of the preceding claims, **characterised in that** for controlling the state "blocking" (safe) the control of the potential through the central control device and a control through a logic (μ C) of the control device are logically AND-linked.

- 5 6. Safety system according to claim 5, **characterised in that** for the logic AND-link the switch of the central control device and a switch of the logic of the control device form a series connection.
- 10 7. Safety system according to one of the preceding claims, **characterised in that** the potential for controlling the power switch can be switched between the earth potential and a control potential which is smaller than or equal to the battery potential, more particularly in order to separate the independent electrical lead connection from a battery voltage potential and to switch it to the earth potential.
- 15 8. Safety system according to one of the preceding claims, **characterised in that** the signal connections are a constituent part of a BUS-system, more particularly a CAN -bus.
- 20 9. Safety system according to one of the preceding claims, **characterised in that** the control device has a micro controller which for controlling the power switch is connected to its control connection.
- 25 10. Safety system according to claim 9, **characterised in that** the micro controller of the control device is in active connection with the independent electrical lead connection for evaluation of the actual potential.
- 30 11. Safety system according to claim 10, **characterised in that** the micro controller of the control device is designed for transferring a status of the potential of the control connection, power switch or state of the electromechanical unit to the central control device through one of the signal links.

12. Safety system according to one of the preceding claims, **characterised in that** the control device is mounted in a vehicle door and the central control device is mounted outside of the vehicle door, but inside the motor vehicle.

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13. Safety system according to one of the preceding claims, **characterised in that** as power switch a relay can be controlled and the independent electrical lead connection is connected to a connection of the relay coil.

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14. Method for safeguarding an adjusting device of a motor vehicle wherein for controlling a lock of the motor vehicle in the blocking (safe) state

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- the functional reliability of a central control device and its signal links is evaluated,
- characteristic values characterising the operating state of the motor vehicle are evaluated
- a potential for controlling the lock is switched to an electrical lead connection independent of the signal links,
- a control command is transferred through one of the signal links of the central control device to a control device, more particularly a door control device, and
- through a power switch of the control device by means of the potential an electromechanical unit of the lock is energised when a fault-free functioning method of the devices and signal connection is detected through evaluation.

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15. Method for safeguarding a locking device of a motor vehicle wherein an unintended control of a lock of the motor vehicle is prevented into the blocking (safe) state in that in the event of a failure, breakdown or started emergency operation of a bus system of the motor vehicle

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- the failure or breakdown is detected through a central control device of the motor vehicle and more particularly an emergency operation is started, or
- from a control device information on a started emergency operation is transferred through the bus system to the central control device,
- the central control device switches a control potential to a lead connection which is connected to the control device and is independent of the connections of the bus system, wherein in dependence on this control

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potential a control of the locking device into the "blocking" (safe) state is prevented.